

# PureGRAPH® PRODUCTS

## Featured PureGRAPH® graphene products

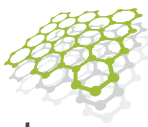
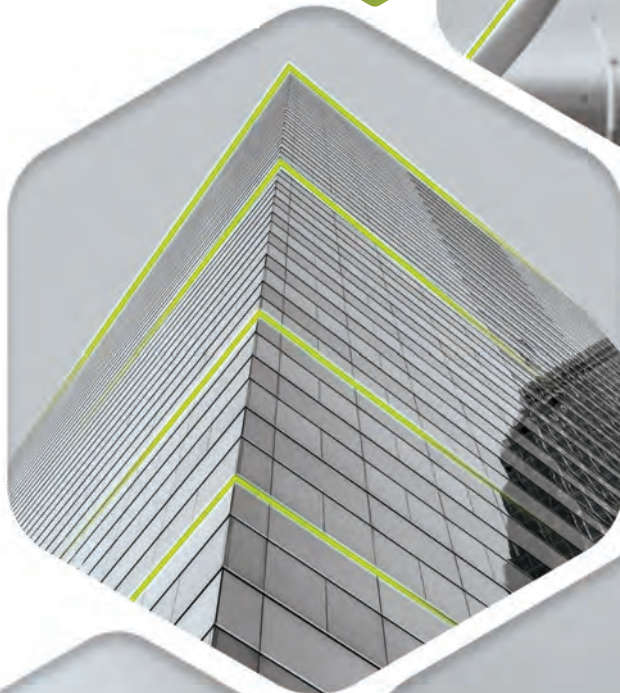
MD-LDPE graphene enhanced masterbatch

MD-EVA Bitumen graphene masterbatch

MB-EVA graphene enhanced masterbatch

AQUA pre-dispersed graphene additives

Nanoplatelet additives



**first** graphene

The world's leading graphene company



PureGRAPH® graphene products are high performing additives for use across many consumer and industrial sectors. With its well-known reputation as the lightest and strongest material on earth, graphene's versatility allows it to be used in a vast range of applications.

First Graphene, the world's leading graphene company, has developed exceptional quality graphene products that provide significant benefits and performance improvement, from light weighting and fire retardancy, to compressive and flexural strength improvements, to exceptional electrical and thermal conductivity.

The PureGRAPH® range is designed to enable easy dispersion in a broad range of materials, including plastics, composites, rubbers and elastomers, cement and concrete, and inks and coatings.

The product range includes a growing list of masterbatch additives, designed for even easier incorporation into standard manufacturing processes. Custom PureGRAPH® MB grades are also available upon request in a range of polymer options that can be tailored to specific materials or applications.

# PureGRAPH® MB-LDPE

## GRAPHENE ENHANCED MASTERBATCH

PureGRAPH® MB-LDPE masterbatch is a graphene-enhanced, pelletised additive designed for use in polyolefin systems including polyethylene and polypropylene.

It can be used in polyamide and acetal polymers, enhancing tensile strength and fatigue resistance. These enhancements lend themselves to precision engineering products requiring dimensional stability and excellent flexural memory.

With thermoplastic polymers among the most widely produced plastics in the world, this product has valuable application across the major global plastics market sectors.

<b>Application</b>	Compatible with a wide range of materials and easily added into thermoplastic production processes such as, injection moulding, blow moulding and extrusion
<b>Sectors</b>	Mining services, leisure equipment, textiles, automotive, construction, coatings
<b>Benefits</b>	Enhances mechanical and thermal properties, tensile strength, fatigue resistance
<b>Form</b>	Pellet
<b>Ordering</b>	Samples from 50g to 500g in screw cap containers. Bulk orders supplied in foil-sealed bags, tonnage quantities available



## PureGRAPH® MB-EVA

### GRAPHENE ENHANCED MASTERBATCH

PureGRAPH® MB-EVA formulation extends the masterbatch product range, increasing applications for blending in elastomers such as rubber systems and plastics, as well as thermoplastics.

The vinyl acetate content of the base polymer brings softness, flexibility and polarity and can potentially be compatible with resins, waxes and adhesives, oil and bitumen.

<b>Application</b>	Blended to thermoplastics and elastomers such as rubber systems and plastics; potentially compatible with resins, waxes, adhesives
<b>Sectors</b>	Mining services, leisure equipment, textiles, automotive, construction, coatings
<b>Benefits</b>	Softness, flexibility, polarity
<b>Form</b>	Pellet
<b>Ordering</b>	Samples from 50g to 500g in screw cap containers. Bulk orders supplied in foil-sealed bags, tonnage quantities available

## PureGRAPH® MB-EVA BITUMEN

### GRAPHENE ENHANCED MASTERBATCH

PureGRAPH® MB-EVA Bitumen is a graphene-loaded carrier masterbatch, designed for blending into asphalt mixtures to improve mechanical properties and stability.

It can also be added to bitumen storage tanks to create a graphene-enhanced polymer modified binder without the need for a high shear mixing.

<b>Application</b>	Binder for bitumen used in asphalt systems; the Vinyl Acetate content has been selected for compatibility with typical penetration-grade bitumen used in the road construction industry
<b>Sectors</b>	Construction of roads and other asphalt surfaces
<b>Benefits</b>	Easy to incorporate using standard processing techniques, supplied in pellet form as a masterbatch for ease of dosing and handling
<b>Form</b>	Pellet
<b>Ordering</b>	Samples from 50g to 500g in screw cap containers. Bulk orders supplied in foil-sealed bags, tonnage quantities available

# PureGRAPH® AQUA

## PRE-DISPERSED GRAPHENE ADDITIVES

PureGRAPH® AQUA is an easy-to-use graphene paste for formulation into water and polar solvent-based formulations.

For cement and concrete applications, PureGRAPH® AQUA can be easily dispersed into admixture and additive formulations or water prior to mixing with cement, sand and aggregates, similar to any typical reagent or additive.

With dosage rates as low as 0.01% of total concrete mix, a small amount of PureGRAPH® Aqua goes a long way when it comes to enhancing strength, durability and multifunctionality.

This enables thinner, lighter concrete products with improved tensile and compressive strength, reducing the carbon footprint of construction.

PureGRAPH® AQUA can also be used across many other applications.

<b>Application</b>	Paints, inks, latex, polymer and cement composites
<b>Sectors</b>	Construction, automotive, leisure products, textiles, coatings
<b>Benefits</b>	Improves mechanical performance, abrasion resistance, anti-corrosion, fire-retardancy and thermal and electrical conductivity
<b>Form</b>	Predispersed in water, additive paste
<b>Ordering</b>	Samples from 50g to 500g in screw cap containers. Bulk orders supplied in foil-sealed bags, tonnage available.



# PureGRAPH®

## NANOPLATELET ADDITIVES

PureGRAPH® Powder additives are characterised by their large platelet size, high aspect ratio and low defect levels – perfect for dispersing across a range of solvents, polymer resins, elastomers and water-based formulations.

PureGRAPH® is typically applied to fibre reinforced plastic composites, elastomers, plastics, coatings, textile materials, energy storage and concrete. An added benefit is enhanced fire retardancy of polymer composites.

Batch to batch consistency is ensured through leading edge quality control testing and various product grades are available in lateral sizes, with tightly controlled geometries.

<b>Application</b>	Fibre-reinforced plastic composites, elastomers, plastics, coatings, textile materials, energy storage and concrete
<b>Sectors</b>	Mining services, leisure equipment, textiles, automotive components and construction
<b>Benefits</b>	Increased flexural and compressive strength, reduced water and chemical permeability, anti-corrosion, fire retardancy
<b>Form</b>	Powder
<b>Ordering</b>	Samples from 50g to 500g in screw cap containers. Bulk orders supplied in foil-sealed bags, tonnage quantities available.



# PureGRAPH®

## PRODUCTS OVERVIEW

	NPA	AQUA	MB-LDPE	MB-EVA	MB-EVA-B
<b>Form</b>	Powder	Paste	Pellet	Pellet	Pellet
<b>Mining</b>	●		●	●	
<b>Leisure</b>	●	●	●	●	
<b>Textile</b>	●		●	●	
<b>Transport</b>	●		●	●	
<b>Construction</b>	●	●	●	●	
<b>Road surfaces</b>					●
<b>Coating / Inks</b>	●	●	●		
<b>Energy</b>	●				
<b>Renewables</b>	●				

MB-LDPE graphene enhanced masterbatch [MB-LDPE]

MB-EVA Bitumen graphene enhanced masterbatch [MB-EVA-B]

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AQUA pre-dispersed graphene additives [AQUA]

Nanoplatelet additives [NPA]



## About First Graphene Ltd (ASX: FGR)

First Graphene Ltd is the leading supplier of high-performing graphene products and product solutions. The company has a robust manufacturing platform based on captive supply of high-purity raw materials and an established 100 tonne per annum production capacity. In addition to multiple commercial applications, the company is a world leader in graphene research and development.

First Graphene is publicly listed in Australia and has a primary manufacturing base in Henderson, WA. The company is incorporated in the UK as First Graphene (UK) Ltd and is a Tier 1 partner at the Graphene Engineering and Innovation Centre (GEIC), Manchester, UK.

### FOR MORE INFORMATION OR TO PLACE ORDERS

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